AMATEUR-RADIO

INCORPORATING THE N.S.W. DIVISIONAL BULLETIN

Vol. 13. JULY, 1945. No. 7

- UNIVERSAL MEASURING INSTRUMENT -

This instrument is designed around a 'magic eye' tube arranged as a DC null indicator, to which can be connected by switching various filters, standard resistances, a diode rectifier etc.

The output from the power supply portion of the unit is applied to a voltage divider which splits the voltage into two parts, 200 volts for operation of the "Magic eye" and 120 volts for the potentiometer giving the comparison voltages. The latter is developed across a neon stabiliser which ensures a constant reference voltage. In addition there is a semi-variable tapping to give 100 volts positive to 'earth' for operation of the megohm meter.

The EM1 is connected between earth and 200 volts positive with an adjustable cathode resistor, 2000 ohms fixed in series with a 5000 ohms variable. This gives variable sensitivity which is useful when rough measurements are to be made. The cathode return is made to a 400 ohm potentiometer in the main potential divider which acts as a zero adjuster. This zero setting is constant for all DC and resistance measurements, and also constant at a different setting for all AC ranges. Maximum sensitivity is obtained with the shadow angle at about 45 degrees but in practice it is found quite satisfactory to adjust the shadow to zero angle.

A Cossor S130 neon stabiliser is used to give an output of about 115 volts at a tube current of 15 M/a. This is used as the comparison voltage, the 5000 ohm voltage adjustment dropping it to 100 volts across the potentiometer network which consumes 5M/a. The potentiometer track R5 consists of a 20 watt type which is fitted with a six inch diameter rotating scale; for the 100 volt range this is connected across the whole supply, in switch position 3. In the other two switch positions resistance networks are brought into circuit which reduce the voltage across R5 to 1 volt and 10 volts respectively.

The calculation of resistance values is straightforward, but tedious, and only the results are given here; they are expressed as functions of R5. R6 = 0.9 of R5; R7 = 0.09 of R5

R8 = $\frac{10R5}{99}$ and R9 = $\frac{R5}{99}$

It is suggested that these resistors should be wire wound and adjusted by comparison with R5 as standard in a conventional bridge circuit.

If it is desired to measure a voltage greater than 100--either AC or DC---an external source of voltage can be connected to the terminals marked, which are normally short-circuited by a link.

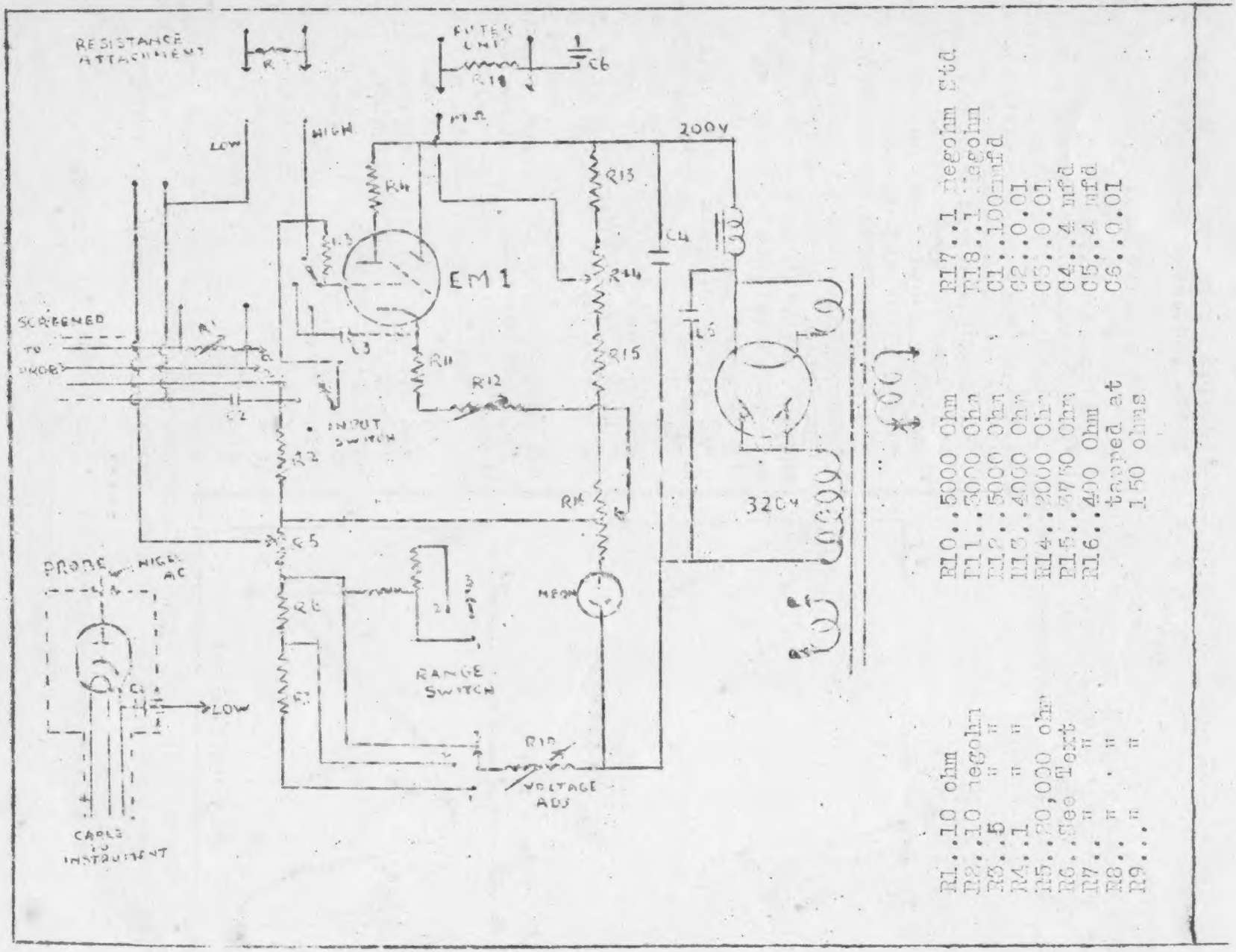
The switching arrangements in the grid circuit of the EM1 are necessary to connect the various filter circuits to the grid. In Switch position 1 the instrument is set for use as a bridge indicator. The input is connected across terminals "HIGH" and "LOW" and the slide-back control set at zero. This use of the meter is effective throughout the audio range. If the alternating voltage under investigation is superimposed on a DC component, the latter can either be balanced out by the slide-back voltage, or removed by a condenser-resistance filter. If the bridge does not present a complete path to DC looking from the detector terminals, a resistance must be connected across these.

In switch position 3, DC voltages can be measured, again using terminals "HIGH" and "LOW", the former being positive. AC components are removed by an internal filter consisting of a 5 megohm resistance and an 0.01 mfd condenser. A DC path across the input is again necessary. Readings are taken on the main scale which is graduated from 1-100. Resistance and insulation are also measured in this position, and this is done by connecting an external 1 megohm standard to the appropiate terminals. For resistances below 1 megohm; the standard which is fitted with rigid spade connectors, is placed between terminals "MEGOHMS" and "HIGH", the unknown between "HIGH" and "LOW" and scale A used with a multiplying factor of 10,000. The range switch then acts in the same way as for DC voltage.

The megohm adjuster is best set as follows:- Having set the EML zero and the voltage adjuster to give correct DC voltage readings, the standard megohm is connected across "HIGH" and "LOW", the scale set to 1 megohm and another external standard megohm connected across "MEGOHM" and "HIGH." The megohm adjustor is then set until the EM1 zero is again reached.

In switch position 2, the diode rectifier is connected for AC voltage measurements. In all cases peak voltage is indicated. The diode is made in the form of a probe and in the original instrument a Mullard EA50 was used--the heater being run at 5 volts instead of 6.3 volts to reduce heater cathode leakage.

Essential points to watch in construction of the probe are:-. (1) a short path from the diode anode to its terminal and from the cathode through the condenser to the earthy terminal. (2) screening as complete as possible. (3) good insulation and screening of cable. (4) ceramic insulation wherever possible in RF circuits. The theoretical value for the input resistance of the meter is of the order of 5 megohms.


RESISTANCE ATTACHMENT
R
FILTER UNIT
R19
C6
HIGH
LOW
M.A.
200V
R14
R13
C4
EM1
R14
R15
C3
R11
R12
C2
INPUT SWITCH
R2
R4
C5
SCREENED TO KNOB
PROBE
HIGH AC
R6
R7
NEON
RANGE SWITCH
R10
VOLTAGE ADJ
C1
LOW
CABLE TO INSTRUMENT
320V
R1..10 ohm
R2..10 megohm
R3..5 " "
R4..1 " "
R5..20,000 ohm
R6..See Text
R7.. " "
R8.. " "
R9.. " "
R10..5000 Ohm
R11..500 Ohm
R12..5000 Ohm
R13..4000 Ohm
R14..2000 Ohm
R15..3750 Ohm
R16..400 Ohm tapped at 150 ohms
R17..1 megohm std
R18..1 megohm
C1..100mfd
C2..0.01
C3..0.01
C4..4 mfd
C5..4 mfd
C6..0.01

A DYNATRON TEST OSCILLATOR

Charles C. Quin VK3WQ. (Laboratory Committee)

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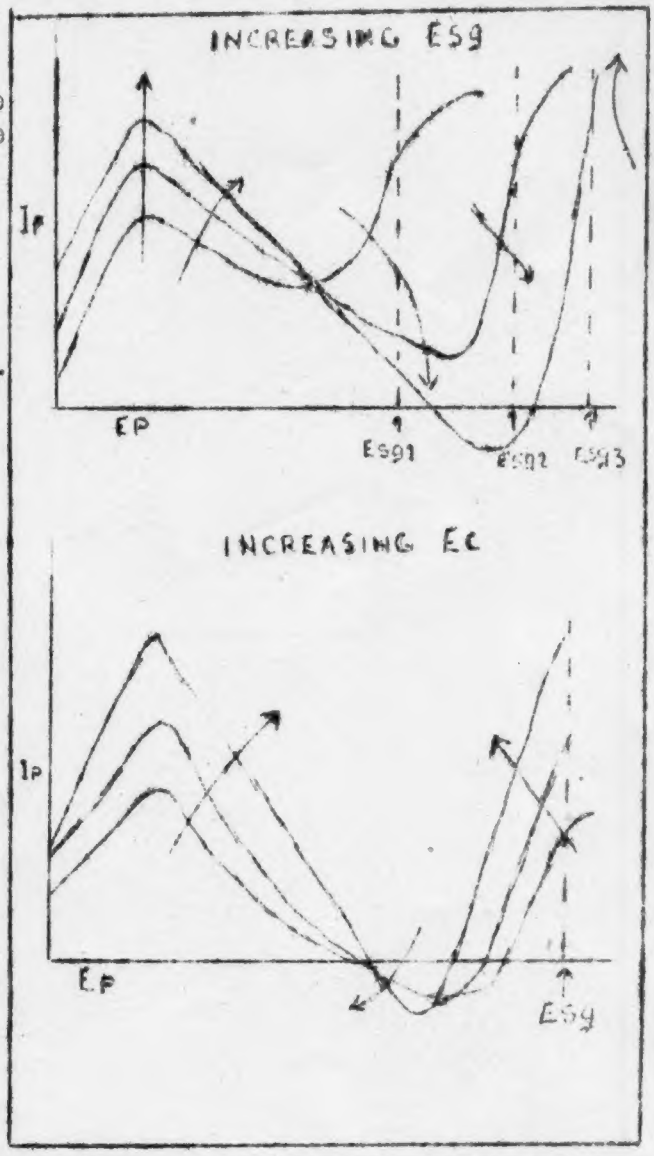
Almost any screen grid tetrode with the plate fed at a substantially lower voltage than the screen grid will work as a Dynatron. Typical curves show that when the plate voltage Ep is between the limits of about 10 to 90 per cent of the screen grid voltage Esg, the plate current (Ip) curve slopes the opposite way from the usual, which means that the plate AC resistance is negative and that any oscillatory circuit connected in series, will oscillate if its dynamic resistance is numerically greater.



As the curves show, the negative resistance can be varied, either by Esg or by the grid voltage Ec. (Screen voltage is worked along the plate voltage scale).

Generally it is convenient to fix Esg at the lowest that will give the required negative resistance and sufficient amplitude of oscillation, and to use Ec for increasing the resistance until oscillation is only just maintained.

Under these conditions it sweeps over the practically straight downward slope and the purity of the waveform is exceedingly good.

Convenient voltages are, Esg 100, Ep about 20 for small amplitudes and 50 for maximum amplitude, variable to about negative 8. With zero bias the plate resistance of some tubes will go down to about negative 6000 ohms, which is capable of setting even heavily damped circuits into oscillation, but when run like this, there is a risk of the dynatron properties deteriorating quickly. The dynatron is therefore not recommended for URF work in which the impedance of the oscillatory circuit is inevitably low.

An important practical point is to make any potential divider used to tap off the plate voltage, considerably lower in resistance

than the negative resistance of the dynatron. The advantages of the dynatron are its ability to set up oscillations in a simple two terminal circuit which may even be screened and inaccessible. The ease and precision of control, the straightness of its working characteristic and the frequency stability of its oscillations, PROVIDED THAT THEY DO NOT SWEEP BEYOND THIS WORKING SLOPE.

It lends itself (as also the transitron) to automatic amplitude control, because the control element, (the grid), forms no part of the oscillating circuit and a very large control is exercised by a small grid voltage.

Examples of practical use are:- Matching coils and condensers to high accuracy for ganged circuits. Measuring or comparing the dynamic resistance of tuned circuits, testing RF chokes for mistuning or absorption over the band of working frequencies. Testing samples of insulating materials for RF losses, measuring the characteristics of aerials.

To understand how the dynatron can be used for the various purposes suggested, it is necessary to visualise it in the circuit as a negative resistance, the amount of which can be conveniently controlled by varying the grid bias. The control grid is NOT subjected to any oscillatory voltage, but is kept at a steady bias voltage that acts as a throttle.

When the positive resistance of a tuned circuit is fully neutralised, oscillations set up in it continue indefinitely. If the grid bias of the dynatron is further reduced, so that the resistance is more than neutralised, the amplitude of the oscillations increases until it sweeps around the bends of the tube characteristic curves so bringing the negative resistance to a balance once more.

This has at least three bad results. It causes the tube to take unnecessarily high current. It produces strong harmonics in the oscillation. It causes the frequency of the oscillation to depart from that which is determined by the capacitance and inductance of the components. It is important then to work with the grid bias on the right side of the oscillation point.

The method in all cases is to compare one circuit or component with others. If actual values of some are known, they can be used as standards to measure the unknown (as already shown in our bridge). Both are connected in turn at X in Figure 1A. (See Article in June Amateur Radio and Figure 3 this issue.)

Smooth control of the grid voltage is essential, as also accurate indication of small changes in voltage.

Although negative resistance does not depend very much on the plate volts, it is convenient to be able to adjust it so as to avoid any part of the curve that looks like (a) Fig 2, (greatly

exaggerated) and to select a point that is more like (b). The difference is that with (a), the negative resistance falls as the amplitude increases and so oscillation, once started, jumps to a large amplitude and there is electrical backlash in adjusting the threshold of oscillation.

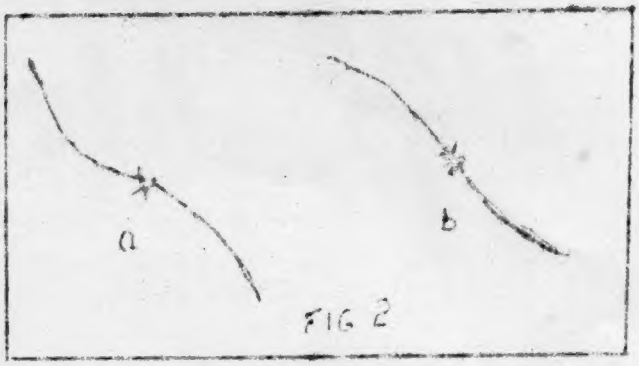


FIG 2

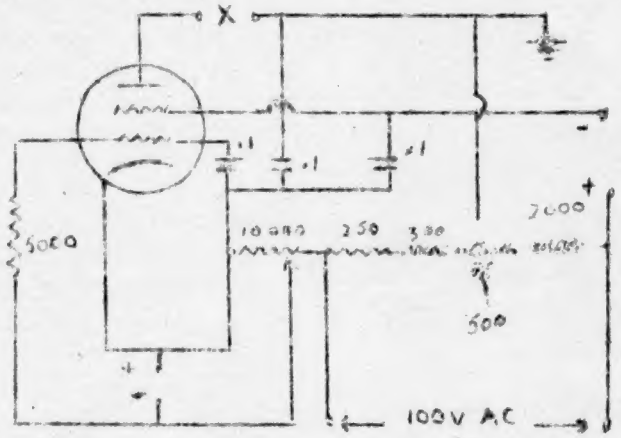
Raw AC can be used to power the dynatron, and this enables lower negative resistance to be obtained without risk to the valve, and the resulting oscillation can be heard in a superhet receiver. A practical circuit is given as follows.

R1 is to prevent excessive grid current on the positive swings when the unit is to be used on RAC - it can be left in when running on DC.

Connection to the plate should be as short as possible as also the connections of the various bypass condensers which should be non-inductive.

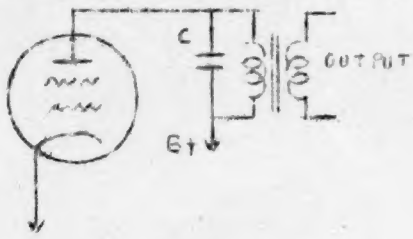
To check whether the dynatron signal in the receiver is a fundamental or harmonic, move the grid control some distance around, and note whether the strength alters greatly - if it does not, but jumps very close to the oscillation point, it is the fundamental.

As in the transitron the dynatron can be used to produce Audio frequency as well as Radio Frequency, or both simultaneously. (See Figs. 4 and 5.)



NOTE:- Unit is earthed at OTE point as shown

FIG 3



For higher audible frequencies it is necessary to connect an air core choke of suitable inductance in parallel to the primary

FIG 4

Transformer Problems

ARE AS SIMPLE AS ...

- Air cooled power transformers up to 2KVA.
- Small size current transformers for rectifier instruments.
- Audio and carrier frequency transformers on silicon steel or nickel alloy cores.
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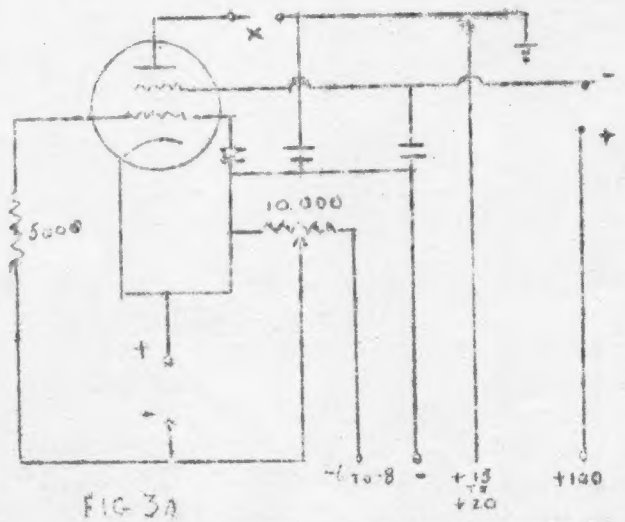
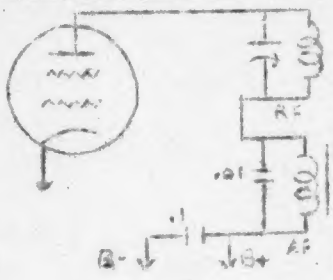


FIG 3A



Here the coil and tuning condenser must always be connected as shown..the 3 hy audio source being on the supply side. Audio is approximately modulating at 1000 cps in this case.

FIG 5

R5 can be a semi-fixed resistor, as, once set, it will be left When used on AC, provision must be made for the grid voltmeter to read AC volts--a DC meter would be damaged, so must not be left in the circuit.

Readings on AC are not so accurate or convenient.
R2 should be definitely wire-wound and, if a good resistance element, and wiper arm contact is good, actual scale markings can be used as reference points

POST WAR PLANNING.

Federal Executive wish to point out that all matter published on this subject is not the FINAL PLAN, but is published for the benefit of Members who may wish to make some comment which will help considerably in drafting a plan acceptable to all.

The following are the draft proposals forwarded to FHQ by the New South Wales Division.

1. Immediate lifting of the suspension of licences and the ban on experimental transmissions upon the signing of the Armistice with Japan. As it is reasonable to assume that this act would see the cessation of hostilities all over the world, there is no apparent reason why the delay that ensued after the last war--four years--should again be permitted to operate.

   Even now the question of the immediate release of the experimenters' sealed containers from custody should be discussed with the Department and the possibility of building transmitting apparatus and testing with a dummy aerial should also be explored.

2. All pre-war frequencies, consistent with service demands, should be made available. AS Service requirements become smaller, these frequencies to revert back to the experimenter. If it is not possible to hand back all pre-war frequencies, allocations to be made in other parts of the spectrum - preferably harmonically related - to compensate for any losses.

   Ultra-high frequencies and the various bands to coincide with U.S.A. allocations.

3. There should be three types of licences - A, B and C - and qualifications for the various grades to be as follows:-

   'C' The pre-war A.O.C.P. - power limit 50 watts - to be issued to successful examinees, 16 years of age and over. All new experimental licensees to serve a probationary period of twelve months, six of which to be confined to the use of c.w. In view of the increased probationary period, it was felt advisable to leave the minimum age at 16 years for this type of licence. In addition, it is proposed that the A.T.C. be continued after the war and as the age of enlistment in that organisation is 16 years it is felt that an A.O.C.P. would be an advantage. Again, educational standards are so high these days that the average youth or young woman of 16 years is in his or her final year at High School.

   'B' To be issued to any licensed experimenter, who has attained the age of 18 years or over and who has served the probationary

period of twelve months as the holder of a 'C' class licence, and provided always that the probationary period has been satisfactory. The holder of a class 'B' licence to be permitted to use 100 watts C.W. or telephony.

'A' To be issued to any licensed experimenter of 18 years or over provided that he has operated an Experimental Station under a class 'B' licence for a period of six months or more. He must pass an examination in Higher Radio Technology and Electrical Theory, also a Morse Code Test of 16 w.p.m. Power to be 250 watts phone or cw. If the applicant already possesses the necessary qualifications or part thereof by reason of other P.M.G. Commercial Examinations he will be exempted from all or part of this examination BUT HE MUST HAVE OPERATED UNDER A 'B' CLASS LICENCE FOR SIX MONTHS.

4. All pre-war experimenters to be issued with a 'B' class licence without being called upon to sit for re-examination. If, in the opinion of the Vigilance Committee, the operation of any Experimental Station-pre-war be such to warrant the opinion that the holder of the licence is lacking in the necessary qualifications, he will then be called upon to undergo an examination.

5. The Vigilance Committee should be re-established under the name of "Experimenters' Advisory Committee" and all its members, with the exception of the Chairman, should be members of the W.I.A.

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POLICE NOTICE.

1000 microfarads reward is offered for the capture of Hop Along Capacity who escaped from Pushpull Primary Cells yesterday armed with a carbon rod. He is wanted for the inductance of an 18 year old coil. Pushpull E.M.F. have been searching the magnetic field for ampere hours. It must be noted that when cornered he will offer great resistance which must be neutralized. Ohm town dialectric agents please pick-up and relay.

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THE WIRELESS INSTITUTE OF AUSTRALIA HAS FOR THE PAST FIVE YEARS KEPT A CLOSE WATCH ON YOUR INTERESTS: AND IS NOW MORE THAN EVER WATCHING AND PLANNING TO GET YOU BACK ON THE AIR. THE WIRELESS INSTITUTE OF AUSTRALIA IS YOUR OFFICIAL ORGANISATION, SO BACK IT UP BY BECOMING A MEMBER OR ENCOURAGING OTHER HAMS TO JOIN.

REMEMBER ... UNITY IS STRENGTH.

THE TECHNICAL LIBRARY

FUNDAMENTAL RADIO EXPERIMENTS...Robert C. Higgy...(New York 1943)
95 pages - 13/6.

This is a book of the familiar type designed for the use of college and university students, which sets out a variety of laboratory experiments, with their aims and methods. It is rather different from the usual run of laboratory handbooks, however, inas-much as it contains a considerable amount of information which can be readily applied beyond the field of the actual experiments described.

The contents are divided into the following chapters: Introduction--use of Measuring Instruments; Fundamental Relations of Direct Current; Wheatstone Bridge; Reactance of Inductances and Condensers; Series and Parallel AC circuits; Study of AC waves; with Cathode Ray Oscilloscope; Series and Parallel Resonance at Low Frequencies; Resonance at High Frequencies; Thermionic Emission and the Diode; Tuned Air Core Transformers at Radio Frequencies; Characteristics of the Triode; Amplification Factor; Plate Resistance and Mutual Conductance of the Triode; Characteristics of the Pentode Vacuum tubes; Power supply Operation; Gain and Frequency Response of Audio Amplifier; RF Oscillators; Resistance Capacity Coupled Audio Amplifier; Operation of Sweep Circuits; Telephone Circuits and Wire telephone transmission; P.A. Systems--the Decibel; Class A Vacuum Tube Amplifiers; Class C Amplifier Characteristics; Modulation; Detectors; RF Transmission Lines; Analysis and Adjustment of Radio Receivers; H.F. Resistance Measurements; UHF Transmission Lines; Selectivity and AVC; Characteristics of Receivers; The Communication Type Receiver; Frequency Measurement; Measurement of Inductance and Capacity; The VT Voltmeter.

An Appendix contains brief constructional information on an RF Oscillator, an AF Oscillator, a VT Voltmeter and a 100kc oscillator with 10kc Multivibrator.

This book is a worthy companion on the bookshelf to Scroggies Radio Laboratory Manual, previously reviewed on this page. Although it contains very little information on the construction of Laboratory instruments, the methods of use and the applications of such equipment is clearly and fully covered.

Our copy by courtesy of McGills Newsagency, Melbourne.

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I desire to acknowledge many letters from readers expressing their appreciation of these reviews.

Alec H. Clyne -- Review Editor

SLOUCH HATS AND FORAGE CAPS

"G Hams are back on the air".....that was the best and most believed "buzz" I've heard since the War began...but, alas, it was not so, yet. But it caused a bit of a sensation and meant a couple of cablegrams between VK and G. Hi! It does appear that some G7's came on the Ham bands for a short time at one stage of the concluding days of the European War, but they were not operated by Hams... and so we still have to wait a bit.

Service Hams...have you sent in your postwar Ham ideas to FHQ yet? From what I can gather, the most debated points are whether there should be various grades of licences...from probationary (after AOPC, of course), B Class and a class A grade..."Super Ham".. Hi! and whether old licencees should sit for their tickets again after the war. What do you think of these ideas...give the matter your best consideration and your ideas to FHQ.

Wing Commander Morrie Meyers VK2VN has been mentioned in despatches...and I am sure we all offer him the heartiest of congratulations. Morrie was the head of the Reserve in VK2 before the War and started at the beginning. He has had a most active career from the beginning and seems to have been right in the thick of everything for the last 18 months or more, so the "mention" has been well deserved as many of you know better than I. Group Off as his last QSL in his last letter he mentions being "confronted by a bearded body in naval uniform...was impossible to recognise him "by face," but it turned out to be Leo Meyers 2KS. Being then on a shore job...after a beach-landing party...he was feeling a bit insulted, but quite happy. Also saw a Lt. Colonel wearing wings of an English type...turned out to be Jim London 2UP...used to be at Manly, as most of the city VK2s will recall."

Telegraphist Jack Coulter VK3MV HMAS Mildura, although he hasn't managed to catch up with "A.R." for a few months reckons I will be crying for notes...if you only knew how I do, on seconds in a few. He spent the summer down South but is wintering on a "sunshine cruise"...with tons of swimming and sunbaking. He and brother Penwill 3KZ had a Hamfest of two when they met after two years...and Cpt. Leigh 3UH reaches the station it will be a case of "sink me Jack" Hi! He spent some time in both Darwin and Katherine areas but not getting "A.R." probably missed the Hams that were stationed there (then..2YC)

Ray Jones 3RJ is now out of the RAAF and after using up all the acquired leave from both the RAAF and the PMG is thinking about getting back to work...,but managed to catch a few complaints such as lumbago, rheumatism, sciatica...well, well..."didn't I say stick to "surgery" Hi ...(Editor please note...QRO. No doubt Ray often thought of the warmth of Darwin during this time and wished the P.M.G. hadn't removed supervisors so badly down in VI. Hi! After it is all over VK3 Hams can look forward to some good tales told with all the 3RJ art, but they will have to wait till "after."

I hope this doesn't become a "Lost and Strayed" column, but anybody knowing the whereabouts of F/O J. Preece 2FM, F/o J.T. Evans 2OK, and P/O Grantham a VK1 please inform the Hon. Sec. VK3 Div. as all their mail is being returned. On the same line...VK3DW would like to hear from VK6 MY,GB, AF, MW and LN...C/o Box M002 GPO Perth.

The VK? in the POW Camp could have been ACI J.T. Edwards 2AKE he was a POW in Italy in '41/42 or Don Knock 3HO suggests it could have been Dick Ross. Dick operated VK2HE way back in '27 and prewar was on the trawler 'Brianna.' He joined the Imperial Navy and was taken prisoner when his ship was sunk in the Indian Ocean, PK by the way is now working for Phillips and I believe we can look forward to the Ham being well catered for by that firm after war... good work don, om.

VK3TV Frank Walker...S/Sgt to you is another one up in the area where 3HJ used to be...more or less...He hasn't contacted any of the Hams in the area yet...but will any Ham around there ask for him at main exchange at VLD...and he will only be too pleased to show them how to operate the whole of the post war rig by means of relays...may even take the tube out and put it back by this method. So those of you that are still there call him up by line or by person. Hi!

Now a Fl/lt is mentioned by 3EV as being in the Solomons those days, where there is only one Nurse to 300 or 400 men...boy, oh boy, how that girl's spare time must be booked up. Hi! Haven't had a note from you since you were a P/O Adrian, so how about a little inocuous news????

Bruce Mann VK3BM forwards extracts from a recent letter from Snow Campbell 3MR. Snow says that he has been travelling round England and Scotland, and expects to be travelling home in the very near future. The latter was dated June 6th, so it is quite likely that VK3 will see him at the Annual General Meeting on August 7th.

Ivor Stafford VK3XB is back again in VIM after spending a considerable period "up north." The furthest north he got was to Thursday Island.

VK3 report that at their last meeting a large number of Hams and future Hams were present. There are stationed at Melbourne. We would like to hear more of your doings...Oh's...Ed....Drop a line to 2YC...He'll sure to be pleased to hear from you.

And now the Editor cannot resist saying that in view of the new arrival in the 2YC household reported elsewhere, he was very doubtful that any notes would arrive from 2YC this month. Was he relieved when they did.

Notes are still pretty slow at arriving and there is still so many of you that others are looking for...so don't forget the QRA, 78 Maloney Street, Eastlakes Mascot....Phone, MU1092.

D I V I S I O N A L N O T E S

- Federal Headquarters -

June has been an eventful month for Federal Headquarters. Early in the month suggestions in connection with the alteration of the regulations governing the issue of licences were sent to each Division, or where the Division was inactive the proposals were sent to known interested Hams in those States.

The immediate result was a sudden revival of interest in Queensland, Western Australia, South Australia and Tasmania. Meetings have been held in each of these States to consider the proposals, and much constructive criticism has been forthcoming. The future of the W.I.A. in these states now seems assured.

New South Wales and Victoria have also considered the suggestions and their comments have been received by FHQ, so we now have a complete picture on a Divisional basis of what the WIA member thinks about post-war licencing. However, our task has just begun, as now we have a wealth of data to co-ordinate as part of a process of carrying the proposals a step further towards the drafting of a final plan.

During the month some members of FHQ and councillors of the Victorian Division had the pleasure of meeting Mr. Mick Wylo VK6BW, Treasurer of the VK6 Division. A considerable time was spent in discussing with him the VK6 view of the draft proposals, and FHQ were able to get a very good idea of their views. It is a pity that more of these meetings could not be arranged, as it is possible at such a meeting, to accomplish more in a couple of hours than weeks writing letters.

They are moving overseas too...from the R3GB comes word that Hams have been advised by that body to apply now for a renewal of licence in preparation for the great day. This move has been made to relieve the rush on the GPO which would occur if all the applications were made at the one time. This does not mean that British Hams will soon be allowed to resume activity, it may be some considerable time before they are allowed to go on the air.

In U.S.A. also the ARRL are on the move, busy gathering data to submit to the US Government in support of the Amateur's case at the next International Telecommunications Convention.

Your Federal Executive is keeping close watch on all overseas moves, and is co-ordinating its own activities with what is being done elsewhere.

NEW SOUTH WALES DIVISION

"House Full. Standing Room Only!" These were signs that could easily have been placed outside the Meeting Room on the occasion of the June General Meeting of the New South Wales Division held at Science House on Thursday 21st June. The attendance was as great if not greater than those of pre-war days and if numbers continue to increase, serious consideration will have to be given to hiring the Main Hall.

Among those present were:- 2TF, 2AGO, 2AGA, 2IE, 2WD, 2DI, 2NP, 2NO, 2HP, 2JT, 2NG, 2PF, 2IW, 2AFQ, 2LO, 2AFB, 2JN, 2DR, 2AJW, 2AKR, 2AX, 2GG, 2WN, 2VA, 2TI, 2AKW, 2AKI, 2AFY, 2ADQ, 6MY, 7CM. Messrs. Clark, Gard, Borlan, Crocker and seven others whose names were unobtainable. Time marches on. During the evening several references were made to the "oldtimers" and the fact that 2AKW brought his son along to this meeting and Bert Glasscock his to the April Meeting, makes us realise that quite few of us are rapidly qualifying for inclusion in the ranks of the "Oldtimers". Think I'll have to bring VL2JY along to a meeting sometime - better not let his mother know!

Members will regret to learn that the Institute has been unfortunate in losing the services of Mr. Perce Dickson VK2AFB. 2AFB was Federal President during the last twelve months of its location in New South Wales, and in addition served on the State Council for quite a number of years. Whilst a State Councillor he acted as Technical Officer to the Division and was responsible for the design of the Receiver for the E.C.N. and the equipment used in the Bushfires Network. Pressure of business has compelled his resignation and he leaves a vacancy difficult to adequately fill.

The Meeting was informed that Wing Commander "Morry" Meyers VK2VN had been recently Mentioned in Despatches. The Chairman in briefly outlining 2VN's career stated that he had been in charge of the R.A.A.F.W.R. in N.S.W. prior to the outbreak of war. When the Reserve was called up he started off as an A.C.2. He had risen to his present rank by hard work in operational areas having been at some time or other in practically every area in the Pacific Zone where the R.A.A.F. has operated. It was decided to forward a letter congratulating 2VN on the Mention.

Members will be pleased to learn that Jim Edwards VK2AKE is now safe in London. Jim was taken P.O.W. early in the Libyan campaign and spent quite a few years in Italian prison camps and was later moved on to Germany. We don't know how long he'll be in London, but if anyone cares to write to him, here's the QTH.
6650 AC1, J. T. Edwards, ex-Australian P.O.W. RAAF, Auspo, London.

Recently quite a stir was created in the dovecotes by the news from a very authentic source that the "G" hams were on the air.

Some people being naturally of a suspicious nature, just couldn't believe this and a cable was despatched to R.S.G.B. Alas a reply was received in the negative, but in a covering letter some very interesting news was received and has been forwarded on to F.H.Q. We'd like to tell you, but that's F.H.Q.'s prerogative.

A very interesting talk was given by Mr. Lusby VK2WN B.Sc. B.E. on Postwar Techniques and Equipment. 2WN dealt at length on Techniques, and held the audience breathless when he described what could be done with a valve or two (more or less of course). Unfortunately very little could be said regarding equipment in view of an unexpected ban placed on discussion at a recent Trade Conference.

In reply to a question the Chairman informed the Meeting that it was expected that "Amateur Radio" would appear in printed form with the October issue. Members expressed satisfaction with this announcement, as. it was felt that the present roneoed form had outlived its usefulness.

In view of the great amount of work thrust upon Council with the plans for Post War Amateur Radio, it has been decided that the pre-war practice of two Council Meetings each month will be reverted to. Council Meetings are now held on the first and third Thursday of each month. With reference to F.H.Q's plea that anyone having ideas regarding Post War Amateur Radio, should get in touch with F.H.Q. or the Divisional Secretary, N.S.W. would like to add its voice to that plea also. All Australian Amateurs are given the opportunity of expressing an opinion as to the conditions under which they are to operate after the war. F.H.Q. are doing a great job and if you don't take advantage of this offer now, it is no use complaining afterwards.

During the month the N.S.W. Divisional Council had an opportunity of meeting "Mick" Wyle VK6BW, Treasurer of the VK6 Division of the Institute. Quite an interesting discussion took place and many views were exchanged. and it is quite safe to say that East and West now appreciate each other's position better than before. Later on we had a ring from "Bob" Anderson VK3WY Secretary of the VK3 Division, and although we would have liked to have seen him personally the telephone call cleared up quite a few matters. Which brings me to this point - a certain well-known VK3 who at one time was federal President and State Chairman was present in Sydney during May--may be still here, but didn't bother to look us up.

It would not be right for me to conclude these notes without mentioning the world shaking event that took place in Eastlakes on Wednesday 6th June in the year of our Lord one thousand nine hundred and forty five. Believe it or not 2XC's wife presented him with a baby girl at last. Now he'll be able to devote some time to getting the Q.S.L. bureau ready. Or will he!

The next General Meeting of the Division will be held at Science House, Gloucester and Essex Streets Sydney on Thursday 17th July at 8 pm, and a Lecture will be delivered by Mr.E.Treharne KK2AFQ,BE.B.sc on "Industrial Electronics" and if you want a seat, come early.

VICTORIAN DIVISION

Members of the Victorian Division are reminded that the ANNUAL GENERAL MEETING of the Division will be held at the Rooms, 191 Queen Street on Tuesday, August 7th 1945 at 8 p.m. Nominations for Council must be in the hands of the Secretary not later than Friday 20th July. It is hoped that members who have not previously nominated for Council will do so, as present members of Council have held that position for some time, they are of the opinion that other members of the Division should help carry the burden.

Since the last issue of the Magazine we have two meetings to report on. At the June Meeting almost a record attendance packed out the rooms. Among those present were:- VU2EB; VK's 6MN; 5ZX;5KL;4RM; 2XX;-ex2XX; 2DH;3AP;BU;BQ;DH;GD;GW;HQ;HX;IK;IW;IX;JO;KJ;KN;LA;ML;MX;NY;PJ: PU;PW;QS;7RC;3RJ;RN;RT;SC;SZ;TF;UC;UQ;UR;VD;VX;WQ;WT;XC;XD;XE;XJ;XZ: YK;YL;ZS: Messrs. Burdekin; Belcher, Cunningham; Bail; Barnett; Bennett Hibbert; Kerley; Searle; Vinney; Ridgway.

The main feature of the evening was the movie show put on by Harry Kinnear 3KN the subject being the Cathode Ray Oscillograph. At the conclusion a hearty vote of thanks was moved for the trouble Harry went to to put the show on.

Mr. Don Bennett of the Victorian Ski Club was present at the June Meeting, and explained the object of their emergency Communications net was to provide a means of contact between various huts in the Alps country so that aid could be readily summoned to assist an injured person or for any other eventuality as may arise. Already some call signs have been allotted and some equipment obtained on loan from the Forests Commission. Tests have been conducted, the most recent on June 16th and 17th, and were heard in Melbourne by a few Hams, though reception was marred by QRM from the third harmonic of 3DB on 3090 KC.

Mr. Bennett advises that there are many difficulties, and the assistance of Hams in overcoming them is sought. The Laboratory Committee has not yet secured full information on all problems, but an outstanding one is that of a suitable aerial, which must withstand not only winds of 70 to 80 mph; but also accumulations of snow and ice, which would cause horizontal antennas to break under the strain. What are your ideas? The Laboratory Committee will be pleased to hear from you. The next tests will be ehld on Tuesday 17th; Wednesday 18th and Friday 20th July, on 3090 KC. Stations will be VL3LC Mt.Hotham; VL3LD Cole Hut being on the air at 9 am; 1.30mm. 5pm or 5.30p.m. 8pm and possibly at 10 pm. VL3AE Mansfield will be on at odd times mainly at 9a.m. 1pm. and 5pm. Reports will be appreciated.

July meeting also saw a very large attendance. Present were:- VK's 3BQ: AS: ZS: UR: GW: PX: WE: XZ:QS:LL:YL:HX:JO:WY:UQ:PU:SI:2FN 3MX:WQ:PJ:NW:XD:IK:QZ:XF:4AN:5KL:3DH:VK;NY: Messrs. Rimmer, Wilson; Sheppard; House; Ridgway; B elcher; Long; Hubbard; Kerley; Roberts; Bail; Gibson; Haines; Berber; McDuff; Harlowe; Riley; Connell; Couch; Jones; Peters; Hanson; Smart. Apologies from VU2EB. VK3VK; VK3JT and VK3RJ.